



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/162,103	09/28/1998	DIETER WINKLER	2935/PDC/ICT	8426

7590 06/05/2002

APPLIED MATERIALS INC
PATENT COUNSEL MS/2061
3050 BOWERS AVENUE
SANTA CLARA, CA 95054

EXAMINER

FERNANDEZ, KALIMAH

ART UNIT	PAPER NUMBER
----------	--------------

2881

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

0

Office Action Summary

Application No.

09/162,103

Applicant(s)

WINKLER ET AL.

Examiner

Kalimah Fernandez

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. In view of the appeal brief filed on 3-6-02, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a plurality of holding arms as recited in claim 15 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat No 5,811,803 issued to Komatsu et al.

4. Komatsu et al discloses a specimen (8) housing as stage (9) therein and connected to a vacuum pump (13) (col.3, lines 38-41).

5. Komatsu et al discloses a load lock for loading a specimen into said specimen chamber (8) (Col.1, lines 10-24).

6. Komatsu et al discloses a minicolumn (5) and mini-environment housing said minicolumn separate from said specimen chamber (col. 6, lines 1-10).
7. As per claim 4, Komatsu discloses said mini-environment having an evacuation outlet to pump (12) (see fig. 1).
8. Claims 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,229,607 issued to Matsui et al.
9. Matsui et al teaches a main vacuum chamber (17) connected to a vacuum pump (21,22) (col.8, lines 14-25) and housing a X-Y-Z stage (4) (col.5, lines 4-7); a holding arm (2) (see. Fig.9; col.11, lines 51-59); a minicolumn (1) attached to said holding arm.
10. As per claim 13, Matsui et al teaches a radial pivot (227,228) (see col.11, lines 51-56).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1,5-8,11,18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No. 5,399,860 issued to Miyoshi and in view of JP Document 40411684 issued to Ito et al.

13. Miyoshi teaches an electron microscope having a main vacuum chamber (40) housing a stage (42) therein.

14. Miyoshi teaches a minicolumn (10) positioned inside said main chamber (40) (col.6, lines 37-68; fig. 3). Miyoshi teaches said minicolumn (10) having a mini-environment defined housing (10a) (see col.4, lines 38-45).

15. Miyoshi does not teach a load lock for loading a specimen into said main chamber.

16. However, Ito et al teaches a main vacuum chamber (14) housing stage (20) therein and connected to a vacuum pump (see fig.2).

17. Ito et al discloses a load lock (18) for loading a specimen into said chamber (see abstract).

18. It would have been obvious to an ordinary artisan to incorporate the teachings of Ito into Miyoshi since Ito teaches the ability to easily obtain SEM image of cut face of a sample (see abstract).

19. As per claim 5, Ito et al discloses a second chamber (18) having an associated valve for hermetically sealing the opening between the said second chamber (18) and sample chamber (14) (see fig.2).

20. As per claim 8, Miyoshi teaches mounting said minicolumn (10) to a stationary platen (52) (i.e. back plate) (col.6, lines 50-65).

21. As per claim 11, Miyoshi teaches a vacuum pump (34) situated inside said minicolumn (10) (see col. 6, lines 14-30).

22. As per claims 18 and 21, Miyoshi teaches a plurality of minicolumn (col.7, lines 34-44).

23. Claims 2-3,9-10,19-20 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyoshi and Ito as applied to claims 7 and 21 above, and further in view of US Pat No 5,229,607 issued to Matsui et al.

24. The obvious combination of Miyoshi and Ito has been discusses except for tilted minicolumn(s); extracting a minicolumn and a bellow structure.

25. However, Matsui et al discloses an additional tilt-able minicolumn situated inside a main chamber (204) (fig.9; col.11, lines 45-59).

26. In addition, Matsui et al teaches a x-y-z mechanism for moving the minicolumn (1) and a bellow structure (109) to facilitate said movement of the minicolumn (col. 6, lines 40-58).

27. It would have been obvious to an ordinary skilled artisan to incorporate the teachings of Matsui into the obvious combination of Miyoshi and Ito since Matsui teaches the ability of monitoring the localized processes (col.11, lines 38-44).

28. As per claims 10 and 23, Matsui et al teaches varying the tilt (col.11, lines 51-59).

29. Claims 14-17 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui et al ('607).

30. Matsui et al teaches a mini-column attached to a holding arm structure (col.11, lines 50-59). Matsui, also, teaches a plurality of mini-columns.

31. Matsui does not explicitly teach a plurality of mini-columns attached to said holding arm structure.

32. However, an ordinary artisan would find it obvious to extend the holding arm structure depicted in fig.9 to accommodate the additional SEM tube shown in fig.11 since Matsui teaches arranging said minicolumn(s) along a circular arc (col.12, lines 51-59).

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Pat No 4,706,019 issued to Richardson and US Pat No 4,864,228 issued to Richardson.

34. Richardson ('019) teaches an electron microscope having a mini-column (29) having a mini-column (col.7, lines 45-48)

35. Richardson ('228) teaches an electron microscope having a mini-column in a mini-environment (see fig.12).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 703-305-6310. The examiner can normally be reached on Mon-Fri between 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on 703-308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-872-9319 for After Final communications.

Application/Control Number: 09/162,103

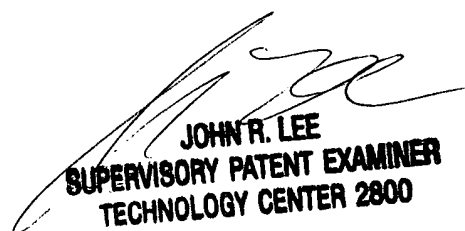
Page 8

Art Unit: 2881

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

kf

June 3, 2002



JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800